

MPM 1D Opener

- 1) Create the Equation of a line with the same y int as $y=4x-2$ but passes through the point (3,6)
- 2) Create the Equation of a line with the same slope as $y=1/4x-2$ but passes through the point (4,8)

Mar 24-1:21 PM

i) A (4, -3) B (6, -5) From 2 points

$$y = mx + b$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-5 - (-3)}{6 - 4} = \frac{-2}{2} = -1$$

$$y = -1x + b$$

$$-5 = -1(6) + b$$

$$-5 = -6 + b$$

$$-5 + 6 = -x + b$$

$$+1 = b$$

$$y = -1x + 1$$

Mar 24-1:13 PM

ii) $y = mx + b$ $m = -6$ $(7, 5)$

$$y = -6x + b$$

$$5 = -6(7) + b$$

$$5 = -42 + b$$

$$5 + 42 = b$$

$$47 = b$$

$$y = -6x + 47$$

Slope } a pt

Mar 24-1:18 PM

iii) 1) Create the Equation of a line with the same y int as $y=4x-2$ but passes through the point (3,6)

$$y = mx - 2$$

$$6 = m(3) - 2$$

$$6 = 3m - 2$$

$$6 + 2 = 3m$$

$$8 = 3m$$

$$\frac{8}{3} = \frac{3m}{3}$$

$$y = \frac{8}{3}x - 2$$

$b = -2$ $(3, 6)$

Mar 22-7:59 AM

#7 p110 wk6K 2: 16.75/hr 27.75/hr

$$S = mn + b$$

$$y = mx + b$$

Scholarly wage $n = \# \text{ of hrs worked}$

$(2, 16.75)$ $(5, 22.75)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{22.75 - 16.75}{5 - 2} = \frac{6}{3} = 2$$

$$y = 2x + 12.75$$

$m = 2$ - raise \$
 $b = 12.75$ - starting wage

Mar 24-1:27 PM

ii) Slope

p136 Slopes } Equations of Lines in Special Cases 2.10

Parallel Lines

ie $y = 4x$ and $y = 4x + 2$

- are lines that are always the same distance apart
- these lines have the same slope

$m = \text{the same} \therefore \text{parallel}$

Mar 24-1:38 PM

Perpendicular Lines

$$ie \ y = \frac{1}{3}x + b \quad \text{and} \quad y = -3x - 8$$

$$y = -\frac{3}{2}x - 2 \quad \text{and} \quad y = \frac{2}{3}x + 4$$

These lines intersect at exactly 90° . The slopes of these lines are negative reciprocals of each other.

Perpendicular $m = -ve$ reciprocals

Mar 24-1:49 PM

Horizontal line

$$y = 6$$

$$b = -2$$

Don't pass the x axis

$m = 0$ horizontal line

Mar 24-1:55 PM

$$(b, 5) \quad (3, 5)$$

$$x_1, y_1 \quad x_2, y_2$$

$$y = mx + b$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{5 - 5}{3 - b}$$

$$= \frac{0}{-3}$$

$$y = 0(x) + b$$

$$y = 0x + b$$

$$5 = 0(b) + b$$

$$5 = b$$

$$y = 0x + 5$$

$$y = 5$$

Mar 24-1:56 PM

Vertical Lines

$$(5, 3)$$

$$x_1, y_1$$

$$(5, 6)$$

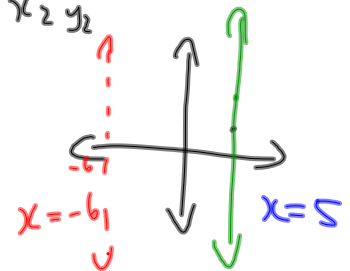
$$x_2, y_2$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{6 - 3}{5 - 5}$$

$$= \frac{3}{0}$$

$$= \infty$$



Vertical line $= \infty$ slope

Mar 24-2:00 PM

p 139

q 1(a) (b) (f)

$$4, b, y, a, c), | 0, b ||^{\infty}$$

Mar 24-2:04 PM